

## CLAIMS

What is claimed is:

- 1           1.     An article comprising:  
2                 a wire-bonding mounting substrate including a first surface and a  
3                 second surface;  
4                 a first wire-bond pad disposed upon the first surface; and  
5                 a first via in the wire-bonding mounting substrate, wherein the first  
6                 via is in electrical contact with the first wire-bond pad, and wherein the first  
7                 via is disposed directly below the first wire-bond pad.
- 1           2.     The article of claim 1, wherein the wire-bonding mounting substrate  
2                 includes a first edge, the article further including:  
3                 a second wire-bond pad disposed upon the first surface;  
4                 a second via in the wire-bonding mounting substrate, wherein the  
5                 second via is in electrical contact with the second wire-bond pad, and  
6                 wherein the second via is disposed directly below the second wire-bond pad;  
7                 and  
8                 wherein the first via and the second via are staggered with respect to  
9                 the first edge of the wire-bonding mounting substrate.
- 1           3.     The article of claim 1, wherein the via includes a liner that is  
2                 electrically conductive.
- 1           4.     The article of claim 1, further including:  
2                 an interconnect filling the via.
- 1           5.     The article of claim 1, wherein the via includes a liner, further  
2                 including:  
3                 an interconnect filling the via.

1           6.       The article of claim 1, wherein the wire-bond pad includes a first  
2 layer and a second layer, wherein at least one of the first layer and the second layer  
3 is selected from a precious metal, a precious metal alloy, silver, gold, platinum,  
4 nickel, palladium, platinum, cobalt, rhodium, iridium, and combinations thereof.

1           7.       The article of claim 1, wherein the wire-bond pad includes a first  
2 layer and a second layer, and wherein the second layer is one of identical material to  
3 the first layer, or at least one of a more noble, or a softer metal than the first layer  
4 1317.

1           8.       A package comprising:  
2                   a wire-bonding mounting substrate including a first surface and a  
3 second surface;  
4                   a first wire-bond pad disposed upon the first surface;  
5                   a first via in the wire-bonding mounting substrate, wherein the first  
6 via is in electrical contact with the first wire-bond pad, and wherein the first  
7 via is disposed directly below the first wire-bond pad;  
8                   a die disposed on the first surface; and  
9                   a first wire bond that couples the die to the first wire-bond pad.

1           9.       The package of claim 8, further including:  
2                   a second wire-bond pad disposed upon the first surface;  
3                   a second via in the wire-bonding mounting substrate, wherein the  
4 second via is in electrical contact with the second wire-bond pad, and  
5 wherein the second via is disposed directly below the second wire-bond pad.

1           10.      The package of claim 8 further including:  
2                   a second wire-bond pad disposed upon the first surface;

3                   a second via in the wire-bonding mounting substrate, wherein the  
4                   second via is in electrical contact with the second wire-bond pad, and  
5                   wherein the second via is disposed directly below the second wire-bond pad;  
6                   a second bond wire that couples the die to the second wire-bond pad;  
7                   and  
8                   wherein the respective lengths of the first bond wire and the second  
9                   bond wire are adjusted so as to tune the package.

1           11.    The package of claim 8, further including:  
2                   a first bump coupled to the first via.

1           12.    The package of claim 8, further including:  
2                   a first bump coupled to the first via; and  
3                   a first trace that makes an electrical contact to the first bump.

1           13.    The package of claim 8, further including:  
2                   a first bump coupled to the first via; and  
3                   a larger substrate coupled to the first bump.

1           14.    The package of claim 8, wherein the first wire-bond pad is part of a  
2                   plurality of wire-bond pads, and wherein each wire-bond pad is directly above a  
3                   corresponding via from a plurality of vias.

1           15.    The package of claim 8, wherein the first wire-bond pad is part of a  
2                   plurality of wire-bond pads, wherein each wire-bond pad is directly above a  
3                   corresponding via from a plurality of vias, and wherein each via is coupled to a  
4                   bump.

1           16.    The package of claim 8, wherein the first wire-bond pad is part of a  
2                   plurality of wire-bond pads, wherein each wire-bond pad is directly above a

3 corresponding via from a plurality of vias, wherein each via is coupled to a bump,  
4 and wherein each bump is directly below a corresponding via.

1 17. A process comprising:  
2 forming a first via in a wire-bonding mounting substrate, wherein the  
3 wire-bonding mounting substrate includes a first surface and a second  
4 surface, and wherein forming proceeds from the second surface toward the  
5 first surface; and  
6 patterning a first wire-bond pad directly over the first via.

1 18. The process of claim 17, wherein forming ceases upon contact with  
2 the first wire-bond pad.

1 19. The process of claim 17, further including:  
2 forming a via liner in the first via.

1 20. The process of claim 17, further including:  
2 filling the first via with an interconnect.

1 21. The process of claim 17, wherein forming the first via precedes  
2 patterning the first wire-bond pad.

1 22. The process of claim 17, further including:  
2 filling the first via with an interconnect;  
3 coupling the first via to a first bump.

1 23. The process of claim 17, further including:  
2 coupling the first wire-bond pad to a first bump.

- 1           24.    A method comprising:  
2                forming a first via in a wire-bonding mounting substrate, wherein the  
3                wire-bonding mounting substrate includes a first surface and a second  
4                surface, and wherein forming proceeds from the second surface toward the  
5                first surface;  
6                patterning a first wire-bond pad directly over the first via; and  
7                coupling a die to the first wire-bond pad.
- 1           25.    The method of claim 24, further including:  
2                forming a second via in the wire-bonding mounting substrate;  
3                patterning a second wire-bond pad directly over the second via; and  
4                coupling the die to the second wire-bond pad.
- 1           26.    The method of claim 24, further including:  
2                filling the first via with an interconnect.
- 1           27.    The method of claim 24, further including:  
2                filling the first via with an interconnect; and  
3                coupling the first via to a first bump.
- 1           28.    A computing system comprising:  
2                a wire-bonding mounting substrate including a first surface and a  
3                second surface;  
4                a first wire-bond pad disposed upon the first surface;  
5                a first via in the wire-bonding mounting substrate, wherein the first  
6                via is in electrical contact with the first wire-bond pad, and wherein the first  
7                via is disposed directly below the first wire-bond pad;  
8                a die disposed on the first surface;  
9                at least one of an input device and an output device coupled to first  
10              wire-bond pad.

1           29.     The computing system of claim 28, wherein the computing system is  
2 disposed in one of a computer, a wireless communicator, a hand-held device, an  
3 automobile, a locomotive, an aircraft, a watercraft, and a spacecraft.

1           30.     The computing system of claim 28, wherein the die is selected from a  
2 data storage device, a digital signal processor, a micro controller, an application  
3 specific integrated circuit, and a microprocessor.